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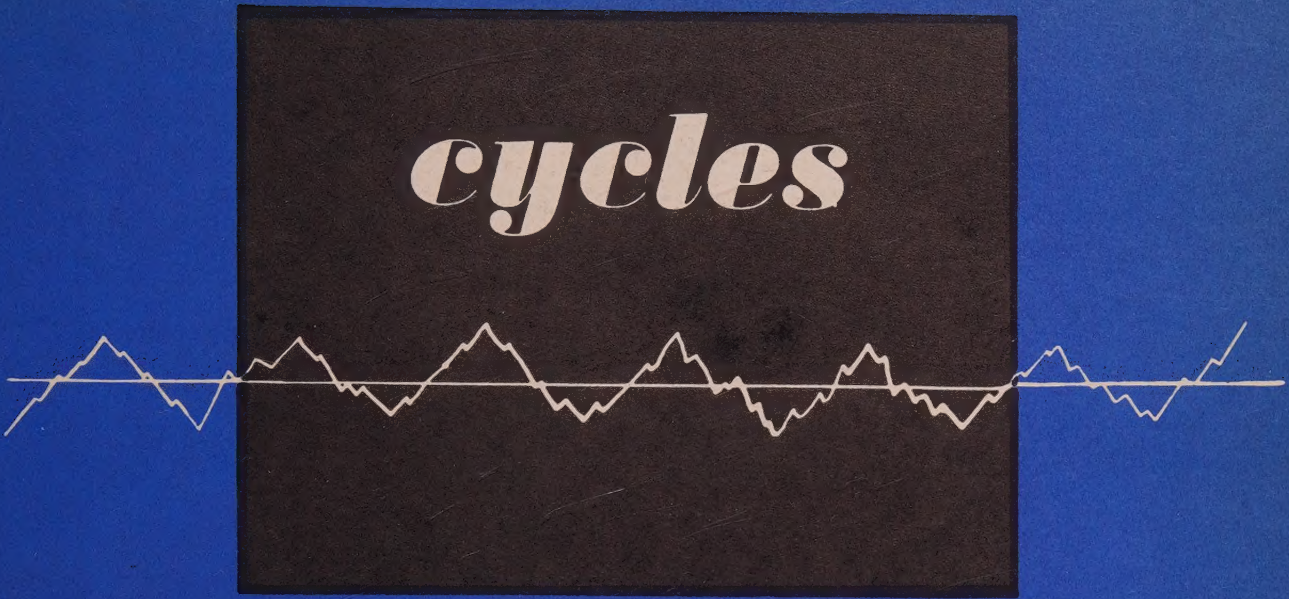

June 1956

FOUNDATION FOR THE STUDY OF CYCLES
New York, New York

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cycles

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VOLUME VII NUMBER 6 JUNE 1956

THE DIRECTOR'S LETTER

Dear Member:

Stock Market Projection

As I told you last month, I am planning to revise the projection of the stock market cycles I made in 1944.

You will doubtless remember that the work of 1944 was based on a projection of 10 cycles discovered at that time in the Standard and Poor's Combined Index of Common Stock Prices from 1871 through 1943, a total of 73 years.

As the most important single cycle in the stock market is a cycle about 9.15 or 9.2 years long (now ideally at crest), the first step in the revision involves making as sure as possible that we have the exact length, strength, and timing of this cycle.

The more figures we have to work with the better job we can do. The 12 additional years of figures that have become available since 1943 will help a great deal. They increase the length of our series of figures by almost one-sixth.

Is there any additional way of adding to the length of our series of figures? If so, we could get the length, shape and timing of this 9-year cycle even more accurately.

Forty More Years of Figures Available

The Standard and Poor's Combined Index of Stock Market Prices can not be carried back farther than 1871 because there are no industrial stock price figures before that time. There are, however, railroad stock price figures that go back through 1831—40 additional years. If we were *sure* that the 9-year cycle in railroad figures behaved the same way as the 9-year cycle in the combined figures, we could splice the railroad figures to the Standard & Poor's Combined figures and get a series 125 years long.

The first step in revising the 1944 projection is therefore to investigate whether or not the 9-year cycle in railroad, industrial, and combined figures, 1871 to date, all behave the same way. If so, we will perhaps be justified in splicing the 1831—1870 rail stock figures on to the Standard and Poor's Combined stock figures to get a longer series with which to work. This first step is being reported upon in this issue. Other steps will follow.

Ups and Downs

Like all of us, I have my ups and downs. This is particularly true in respect to my cycle work. Sometimes, in studying cycles, I feel like the fellow in the *Mikado* who, for his sins, was condemned to play

"On a cloth untrue,
With a twisted cue,
And *eliptical* billiard balls."

At other times, I feel that we are really making progress. (As the Cheshire Cat told Alice, you are sure to get *somewhere* if only you walk long enough!)

At the present time I am in one of my optimistic moods.

Reasons for Being Happy

I have several reasons for being happy: (1) The New York office continues to function like clockwork; (2) the new research office in Pittsburgh is established and is beginning to turn out material (the first of it in this issue); (3) the Cyclopaedia of Cycles is under way; and, more important (4) the recapitulation of the 9-year cycle which I am publishing as part of the 1955--1956 postscript gives unexpected and very welcome support to some hypotheses about cycle cause and cycle behavior which I published a year or so ago.

Three Hypotheses

You may remember that in the March 1956 report I advanced three hypotheses, as follows:

Double and Triple Progression

1. The first hypothesis is that the lengths of the sort of cycles we have been investigating are related by double progression and by triple progression simultaneously. That is, the hypothesis says that for a cycle of some particular length there should be another cycle twice as long, and one-half as long, and one three times as long and one third as long. It follows that there would be still other cycles related to each of these lengths in turn.

Ultra Long Waves

2. The second hypothesis is that the ultimate causes of the cycles are ultra-long electromagnetic energy waves originating outside the solar system.

Planets Affected

3. The third hypothesis is that the revolution periods of the planets have been influenced by the self-same ultra-long waves postulated above. If this third hypothesis proves to be true it would explain why so many of the cycles observed here on earth seem to have lengths which are related to the length of time it takes one or another of the planets to go about the sun.

A Corollary

From these hypotheses (if they prove to be true) it follows inevitably that the length of time it takes each planet to go about the sun would be one of many true cycle lengths, *and* that the half *and* the third of this time would also be true cycle lengths *and* that the half *and* the third of each of these fractional lengths would in turn also be true cycle lengths and so on.

It also follows that twice and three times these lengths would be true cycle lengths, and so on.

So what do we find?

The time it takes the planet Uranus to go around the sun is 84.01 years. The third of a third (1/9th) of this length is 9.334 years.

The time it takes the planet Pluto to go around the sun is 248.42 years. The third of a third of a third (1/27th) of this length is 9.201 years.

The time it takes the planet Neptune to go around the sun is 164.78 years. The half of a third of a third (1/18th) of this length is 9.154 years.

The time it takes the planet Earth to go around the sun it 1 year. Three times three is 9 and nine times 1 year is 9 years.

These Are The Lengths We Find!

Now these four lengths—9.33, 9.20, 9.15, and 9.0 *are the very lengths we most often get when we study the so-called "9-year" cycle!* (See table on page 172 of this issue.) Is it any wonder I am encouraged?

Of course it's too soon to go overboard on this coincidence. For one thing, my measurements may not be exactly right. For another thing, the correspondences may be *merely* coincidences. And finally I may have had some of these correspondences in mind when I developed the hypothesis, although I can't recall ever having noticed anything of the sort prior to about a month ago. However, even taking all these qualifications into account I find myself highly gratified. The pieces seem to be falling together more and more.

Easy to Test

If these hypotheses are correct we would expect to find cycles just one third of these lengths, namely 3.111 years, 3.067 years, 3.051 years and 3.000 years. We would also expect shorter lengths--halves, thirds, fourths, ninths, twelfths, etc. This corollary would be fairly easy to test. Now that we have a research program going, we will do it as soon as time (and money) permit.

Cordially yours,

Ned Dewey

Edward R. Dewey
Director

THE 9.18 YEAR CYCLE
IN
COMMON STOCK PRICES

THIS study is part of an audit of some work done in 1944. At that time I isolated, projected, and combined 10 different cycles in common stock prices. Each of these 10 cycles will be re-examined in the light of increased cycle knowledge and 12 more years of figures. The results of this re-examination will be reported upon in a series of articles to be published in *Cycles*. A new synthesis and a new projection will be made. Watch for it.

9-Year Cycle Strongest

The so-called 9-year cycle in common stock prices is the strongest and best substantiated cycle in these figures. It is therefore appropriate to begin the audit of my 1944 stock market work by a re-study of this cycle. Such a re-study will tell you the exact length, strength, and timing of this cycle in these figures, as best I can, using annual figures. (The use of monthly figures would increase the accuracy of the findings, but lack of time and money forbid this refinement at the present time.)

The re-study of the so-called 9-year cycle in common stock prices shows its characteristics to be as follows, as nearly as I have been able to determine them through the use of annual figures.

Length

The *length* of the 9-year cycle in the Cleveland Trust Company index of rail stock prices, 1831—1940, extended to 1955 by use of the Standard & Poor's Corporation index of rail stock prices, is 9.18 years. In my work on the "9-year" cycle this length of 9.18 years has been used in studying the Standard & Poor's Corporation index of industrial stock prices, 1871—1955 and that company's combined stock price index, 1871—1955. (The combined stock price index includes rails, industrials, and utilities—a present total of 480 stocks.) It would also be the proper length to use for studying the Dow-Jones indices.

Strength

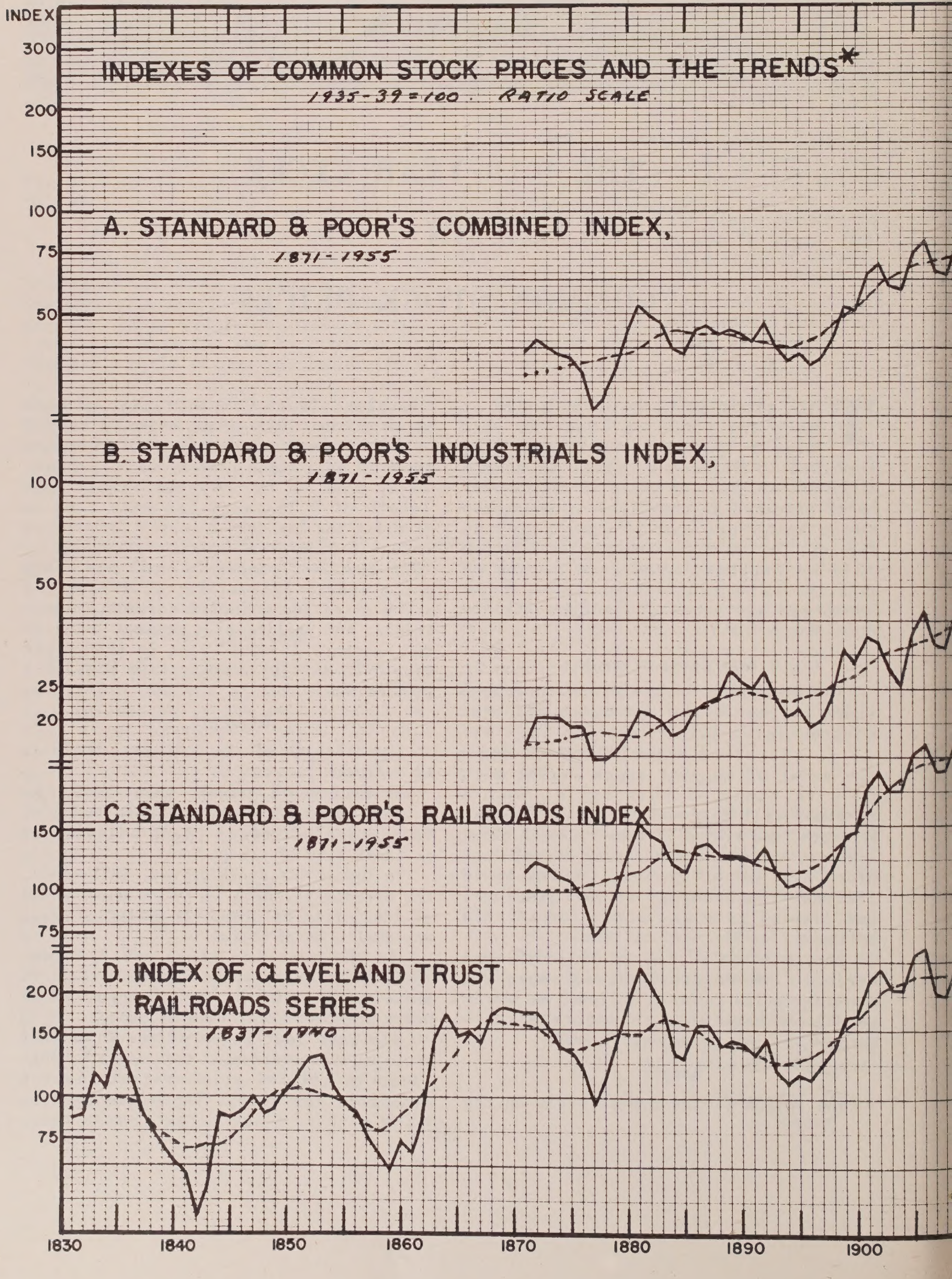
The *strength* of the 9.18-year cycle is as follows:

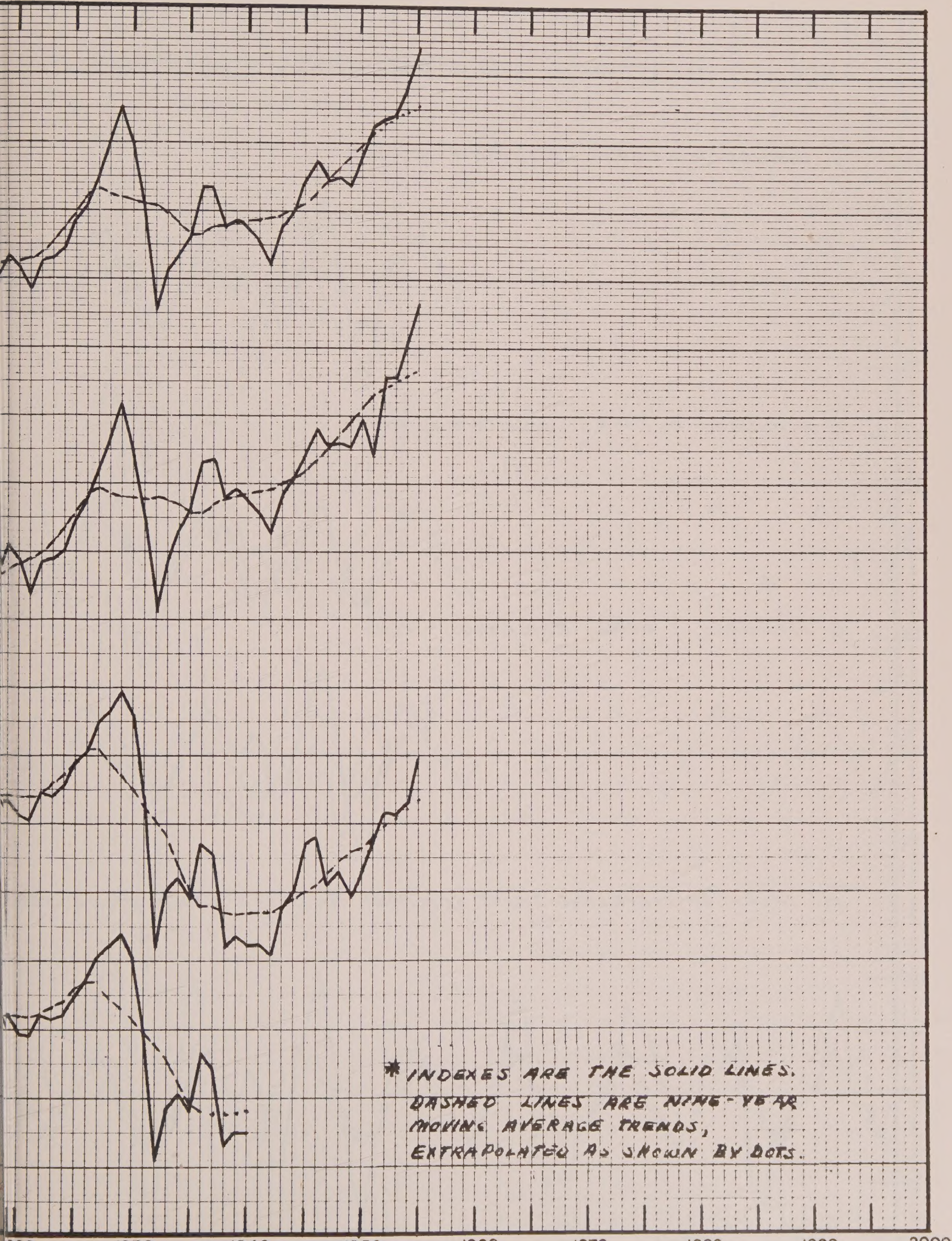
In *rail* stock prices, 1831—1955, the average strength is 17.4% above trend at ideal time of crest; 15.8% below trend at ideal time of trough.

In *industrial* stock prices, 1871—1955, the average strength is 19.0% above trend at ideal time of crest; 16.2% below trend at ideal time of trough.

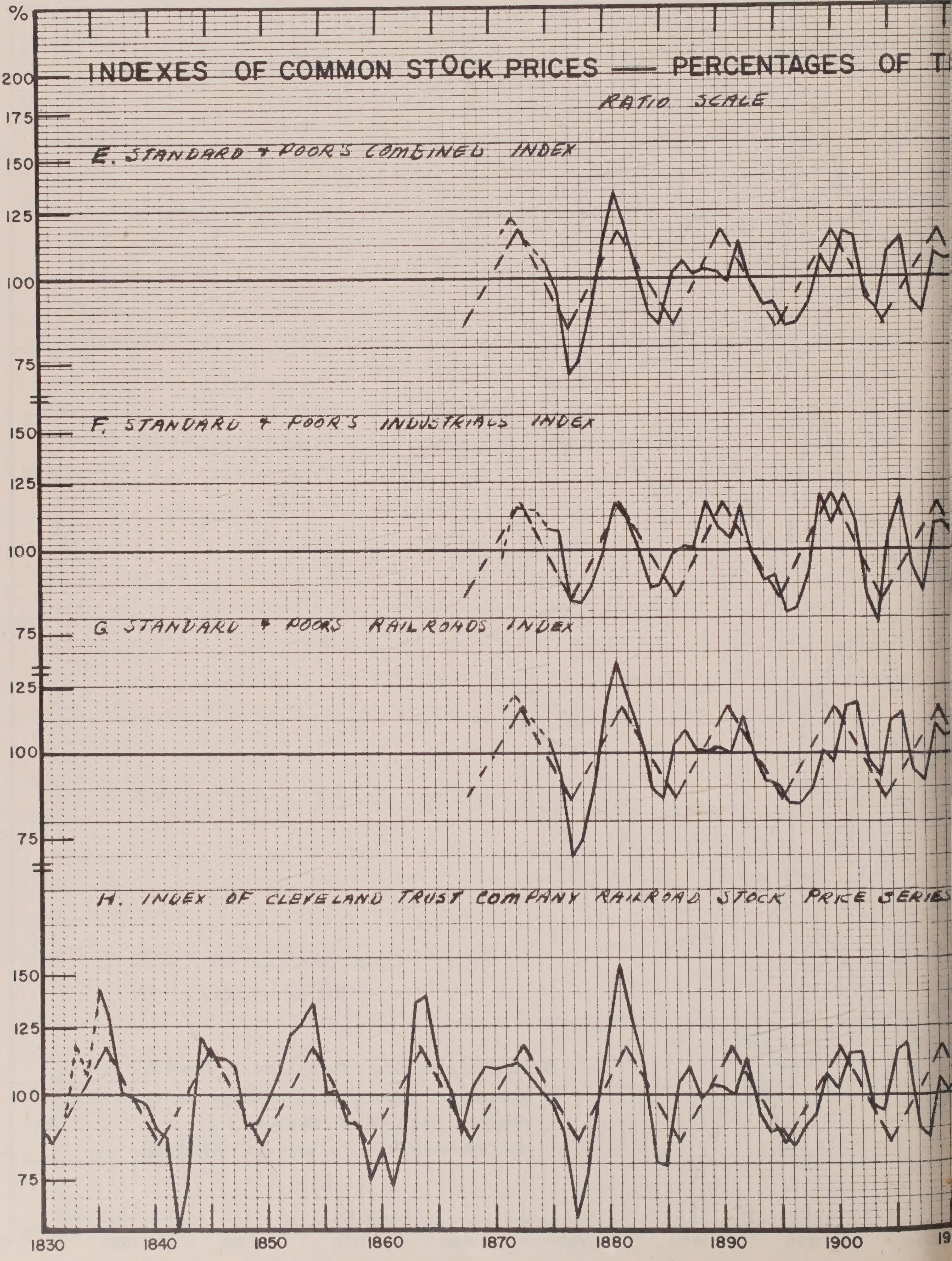
In the *combined* stock price index, 1871—1955, the average strength is 17.1% above trend at ideal time of crest; 14.8% below trend at ideal time of trough.

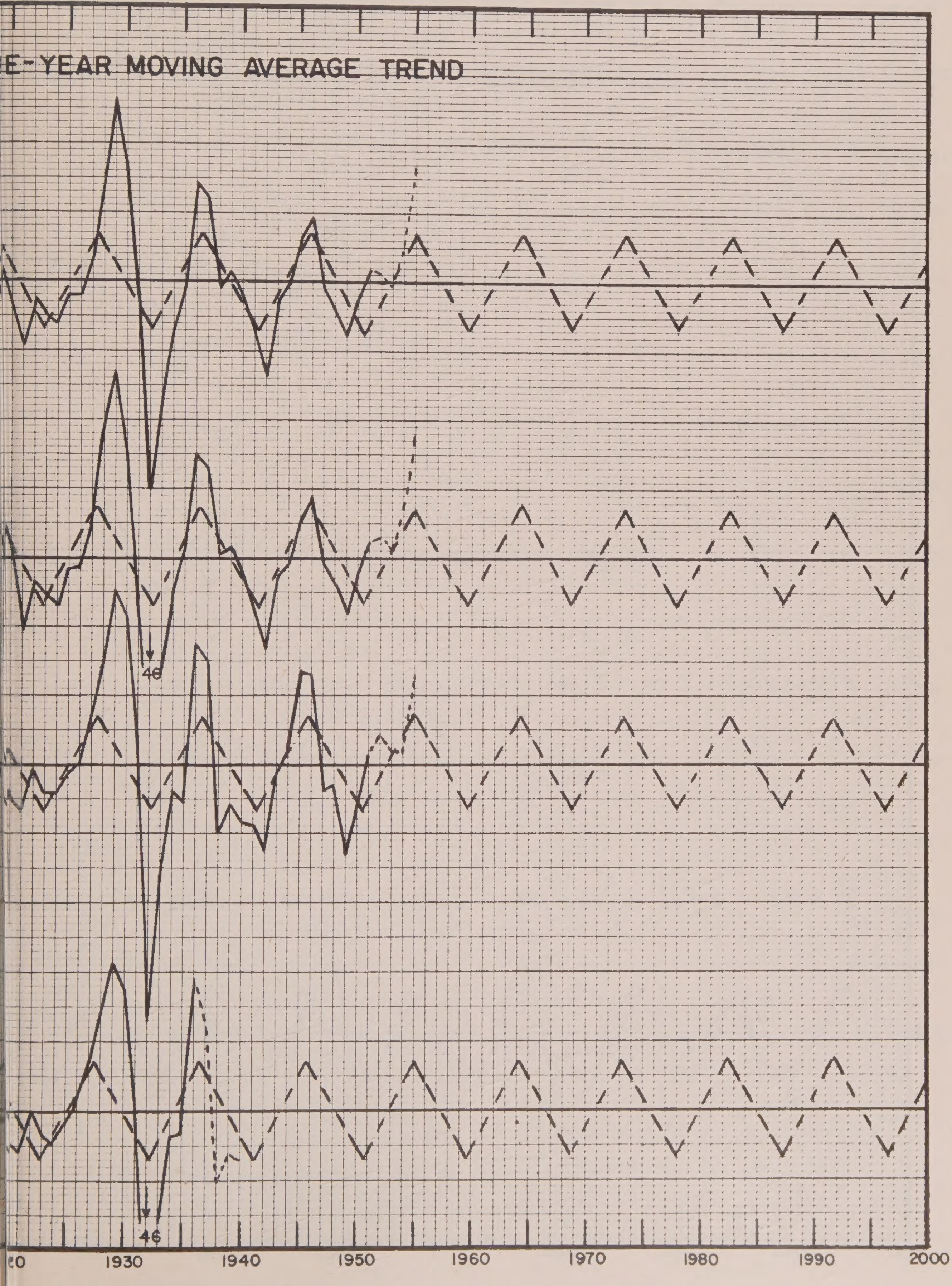
The last four waves of the 9.18-year cycle have been stronger than average. This is so in all the stock market figures available for study. There are reasons

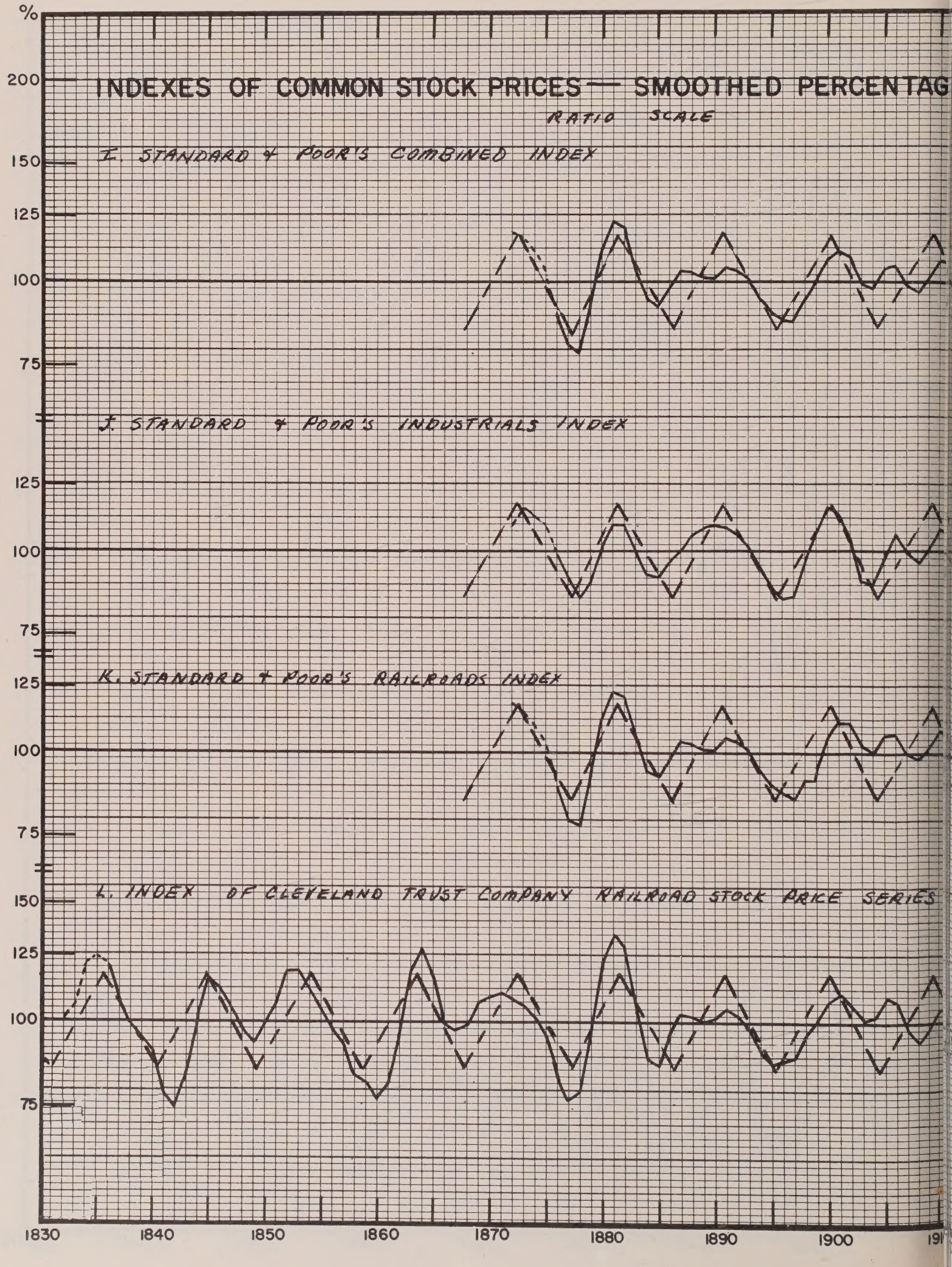

INDEX
300
200
150
100
75
50
INDEXES OF COMMON STOCK PRICES AND THE TRENDS*
1935-39=100. RATIO SCALE
A. STANDARD & POOR'S COMBINED INDEX,
1871-1955
100
50
25
20
B. STANDARD & POOR'S INDUSTRIALS INDEX,
1871-1955
150
100
75
C. STANDARD & POOR'S RAILROADS INDEX
1871-1955
200
150
100
75
D. INDEX OF CLEVELAND TRUST
RAILROADS SERIES
1831-1940
1830
1840
1850
1860
1870
1880
1890
1900



* INDEXES ARE THE SOLID LINES.
DASHED LINES ARE NINE-YEAR
MOVING AVERAGE TRENDS,
EXTRAPOLATED AS SHOWN BY DOTS.


%
INDEXES OF COMMON STOCK PRICES — PERCENTAGES OF
RATIO SCALE
E. STANDARD + POOR'S COMBINED INDEX
200
175
150
125
100
75
F. STANDARD + POOR'S INDUSTRIALS INDEX
150
125
100
75
G. STANDARD + POOR'S RAILROADS INDEX
125
100
75
H. INDEX OF CLEVELAND TRUST COMPANY RAILROAD STOCK PRICE SERIES
150
125
100
75
1830
1840
1850
1860
1870
1880
1890
1900
19


E-YEAR MOVING AVERAGE TREND
46
46
20
1930
1940
1950
1960
1970
1980
1990
2000


%
INDEXES OF COMMON STOCK PRICES — SMOOTHED PERCENTAG
RATIO SCALE
I. STANDARD & POOR'S COMBINED INDEX
J. STANDARD & POOR'S INDUSTRIALS INDEX
K. STANDARD & POOR'S RAILROADS INDEX
L. INDEX OF CLEVELAND TRUST COMPANY RAILROAD STOCK PRICE SERIES
200
150
125
100
75
125
100
75
125
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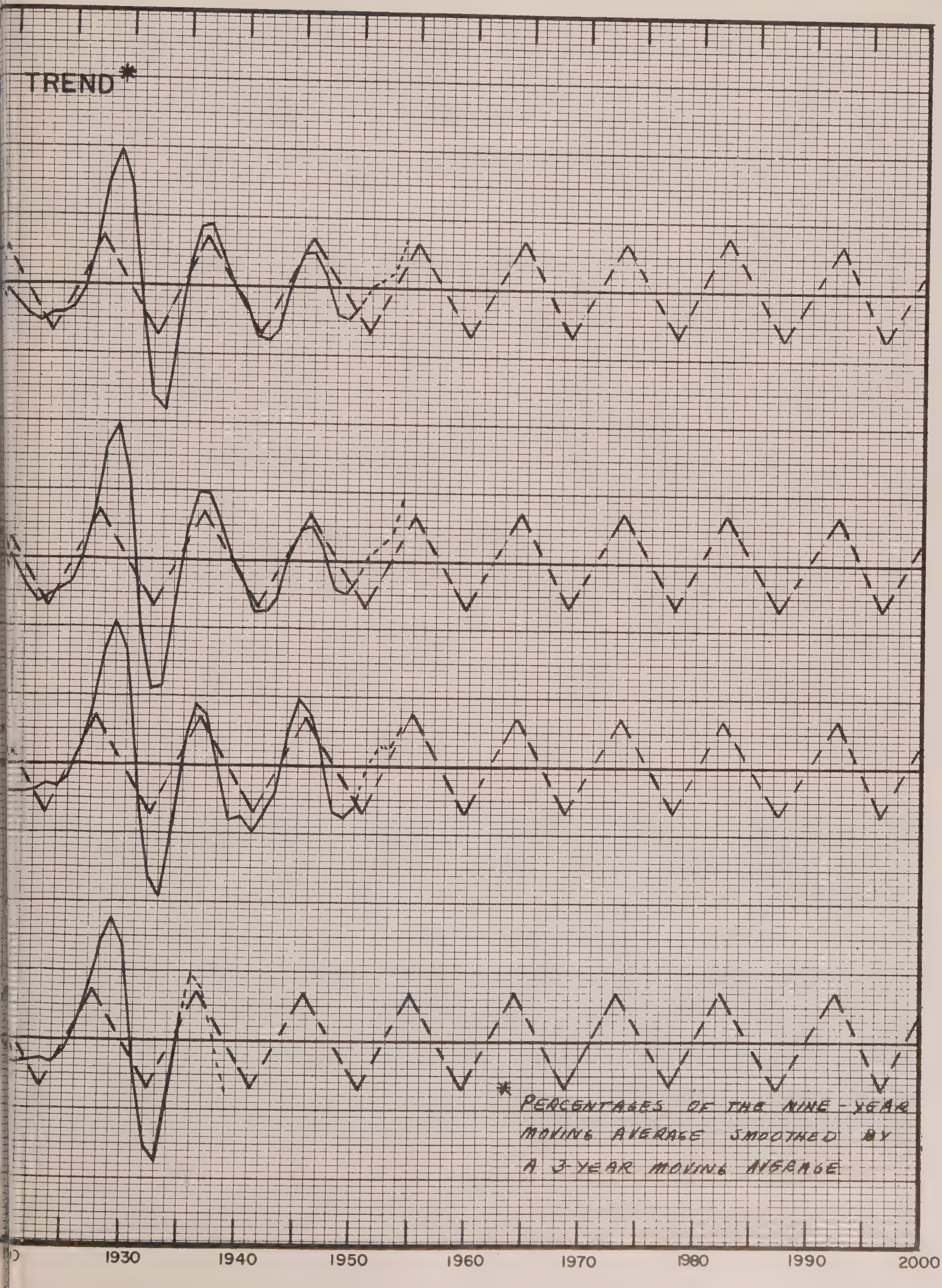
150
125
100
75
1830
1840
1850
1860
1870
1880
1890
1900
191



* PERCENTAGES OF THE NINE-YEAR MOVING AVERAGE SMOOTHED BY A 3-YEAR MOVING AVERAGE

which will be discussed in another article for thinking that this greater-than average strength has significance and will continue. It is therefore appropriate to use more than the *average* strength given above in trying to estimate the size of the 9.18-year waves of the immediate future. The proper values to use for the combined stock index, which is the one being forecast, are 32% above trend at ideal time of crest: 29% below trend at ideal time of trough.

Timing

The timing of the 9.18-year cycle in the *rail* stock price index, 1831—1955, puts the current crest ideally at 1955.36 (May, 1955).

In the Standard and Poor's *combined* index, 1871—1955, the current crest comes ideally at 1955.62 (August, 1955). It cannot be said too often that the *actual* crests and troughs rarely, if ever, come exactly at the ideal time. *Actual* crests and troughs are usually early or late, often by considerable intervals.

Charts of the Indices

On the double page spread on pages 158 and 159 you will find charts as follows:

Curve "A" shows the Standard & Poor's *Combined* Stock Price Index, 1871—1955.

Curve "B" shows the Standard & Poor's Corporation *industrial* Stock Price Index, 1871—1955.

Curve "C" shows the Standard & Poor's Corporation *Rail* Stock Price Index, 1871--1955.

Curve "D" shows an Index of the Cleveland Trust Company' tabulation of Rail Stock Prices, 1831--1940.

To each curve I have added, by means of a broken line, a 9-year moving average trend. A nine-year moving average trend always stops four years short of each end of the series of figures with which you are working. I have ventured to estimate these terminal values. My estimates are added by a dotted line.

Charts of the 9.18-Year Cycle

The 9.18-year cycle can be seen better if we express the indices as percentages above and below trend. This has been done in the second double page spread printed on pages 160 and 161.

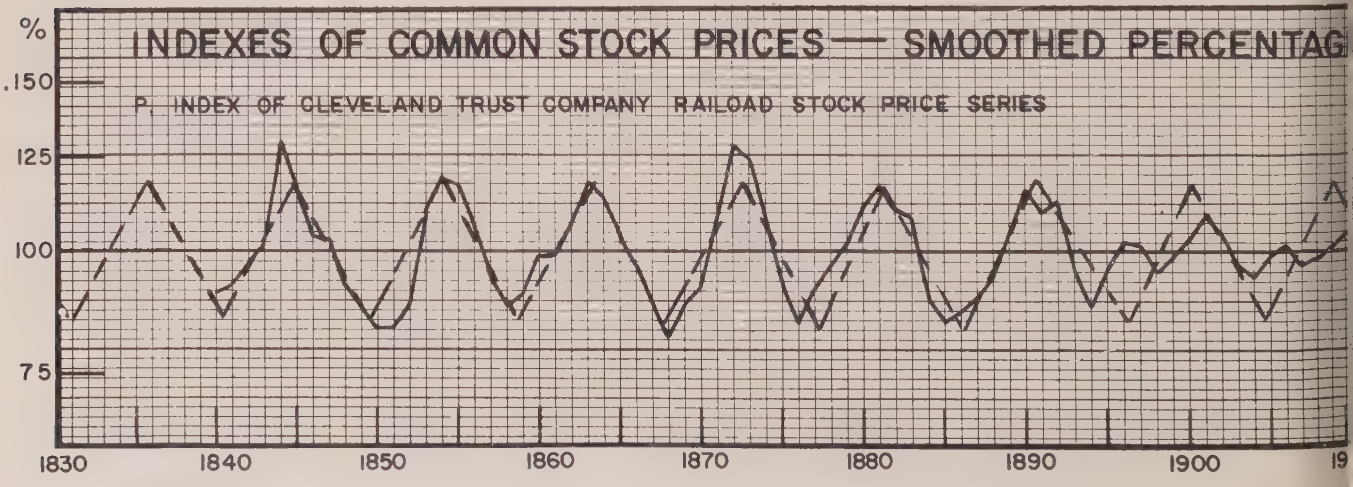
Curve "E" shows the percentages by which the values shown in Curve "A" are above or below the 9-year moving average trend. Curves "F," "G," and "H" give similar percentage deviations for Curves "B," "C," and "D."

In each case I have added a diagram of the 9.18-year cycle.

Charts of Smoothed Figures

You can see the 9.18-year cycle better if you smooth out the minor fluctuations. I have done this for you on pages 162 and 163.

Curve "I" shows Curve "E," smoothed. Similarly, Curves "J," "K," & "L" show



smoothed values for Curves “F,” “G,” & “H.”

In each case the smoothing was done by a 3-year moving average. This process loses one value at each end of each series. This explains why this set of curves start in 1872 and 1832 and end in 1954.

The Section Moving Average

Another way to show the 9.18-year cycle so it can be studied better is to construct what is called a “three 9-year section moving average.” Such a computation merely averages the 9-year pattern for the first three nine-year sections, then for the 2nd, 3rd, and 4th nine-year sections, and so on. The results of such computations, based on limited data, for Curve “H,” 1871—1940, and Curve “G,” 1941—1955, are shown in Curve “P,” below. The 9.18-year cycle shows up very clearly.

A three 9-year section moving average loses nine values at each end of the series. This fact explains why the section moving average starts in 1840 and ends in 1946.

DISCUSSION

Varying Amplitude

Study of Curves “L” and “P” shows clearly that the 9.18-year cycle in stock prices was first strong, then weak, then strong again. As said above, this somewhat unusual behavior will be discussed in a separate article.

Inflation

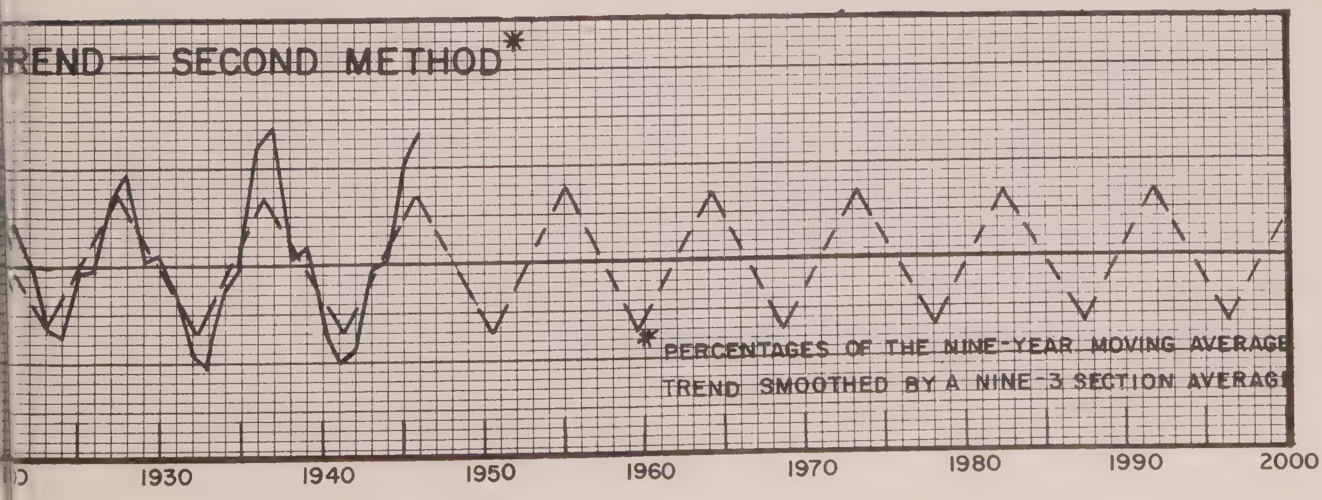
In previous articles I have said that I was unable to see any clear evidence of inflation in the Standard & Poor's Corporation Combined Stock Price Index (Curve “A,”) This fact has always surprised me for stock prices should reflect the dilution of our currency.

The charts on pages 158-159 clear up the mystery. Inflation is clearly evident in the *Industrials* (Curve “B”). But when the rails (Curve “C”) are averaged in with the industrials (and the utilities) to form the combined index, the collapse of the rails offsets the inflation factor, so that the effect of inflation is obscured. Inflation will have to be studied in the industrials alone.

The Data

What figures to use? In 1944 I used the Standard and Poor's Corporation Combined Index (now made up of an average of 480 stocks). I continue to feel that this index is the best to use for a stock price cycle analysis.

The Standard & Poor's Combined Index has one fault: It is not available prior to 1871. This is not the fault of the Standard & Poor's Corporation. There simply are no



adequate industrial stock price figures available before that time.

The shortness of the series (85 years) is unfortunate when we are studying a cycle as long as 9 years. It would be most helpful if more figures were available, but of course they are not.

On the other hand, *railroad* stock price figures are available over a much longer period of time. If, over the period for which combined figures *and* railroad figures are available (1871 to date) the "9-year" cycle proves to be the same cycle, we will be justified in studying its length in the longer (rail) series of figures and applying what we learn to the shorter (combined) series.

Rails Better

You may ask, if the rails are so much better for study, why bother with the combined index at all? The answer is, first, rails do not carry the same popular interest as the combined figures, and second, the two series do not behave exactly the same way. A forecast of rail stock prices would not do as a forecast of combined stock prices.

But, you may say, if the two series don't behave the same way, how can we get information about the one by studying the other?

Bread and Cake

Let me illustrate by a homely example: Bread and chocolate cake are very different foods. They don't look alike. They don't taste alike. But the *flour* in one might be identical with the *flour* in the other. Suppose you were interested merely in the flour and had only a small sample of chocolate cake and a big sample of bread. Suppose you could convince yourself that the flour in both was the same—let's say wheat flour in both. You could then study the characteristics of the wheat flour in the big sample of bread and apply this knowledge to the flour in the small sample of chocolate cake. So it is with the rails and the combined stock price figures.

The Cleveland Trust Company has a tabulation of rail stock prices, 1831 to 1940 and of course the Standard & Poor's Corporation Index of Rail Stock Prices carries our knowledge of these figures up to date.

9-Year Cycle Same in Both

A study of the "9-year" cycle in both Standard & Poor's Corporation Combined Stock Price Index and in the Cleveland Trust Company Railroad Stock Prices over the years for which both are available (1871—1940) shows that the so-called 9-year cycle has approximately the same length, shape, and strength in each of these two series of figures. (What these lengths, shapes, and strengths are is unimportant at this juncture. The important thing is that they are substantially the *same* in both series.) This being so we are justified in using, in the shorter *combined* series, the length, of this cycle as found in the longer railroad series, where it can be got more accurately.

It should be noted that I am *not* saying that railroad and combined stock price *indices* behave the same way. Taken as a whole they do not. Doubtless one series has cycles and/or randoms not present in the other. But as far as we can tell this one *cycle*, and doubtless other individual *cycles*, too, seem to have the same length, strength, and shape in each series.

You may have noticed that I did not say the cycle has the same *timing* in each series of figures. It does not. But right now we are interested in *length*.

Having found that it is permissable to use for *both* series of figures the *length* of the cycle as found in the railroad series, (it turned out to be 9.18 years), we now proceed to make the necessary investigation.

Using this length, it is easy to get the other characteristics for the various series as reported upon above.

Another article in regard to cycles in the stock market will appear next month.

E.R.D.

THE 1956 POSTSCRIPT

TO

CYCLES—THE SCIENCE OF PREDICTION

PART VI: THE 9-YEAR CYCLE—CONTINUED

"YOU'VE said quite a lot about 9.2- and 9.3-year cycles," said my friend Robert Steele as we began another one of our Sunday afternoon talks, "but you've never given me any particulars about the 9.0-year cycle which you said is also present. What shows this 9.0-year cycle the clearest?"

"The tendency of man to turn to God."

"Well, Well! Here we have something! How do you measure that? It sounds as if you had a story here. Suppose you start at the beginning."

New Membership Cyclic

"All right," I answered, "One evening, when I lived in Riverside, Connecticut, the phone rang and a pleasant voice said, 'This is Harold Martin speaking. I'm pastor of the First Congregational Church of Norwalk, Connecticut. I'd like to come to your office to show you some charts I've made that show the fluctuations of new membership of various Protestant denominations and of various individual Protestant churches. New membership seems to go up and down in cycles and I want your opinion in regard to what I've discovered.'

"Of course," I said, "I'd be delighted." And so, in due course, Reverend Martin appeared.

"He had done a prodigious amount of work. He had charts of new members for the Methodist, Episcopal, Presbyterian, and Congregational denominations back to the very beginning of such figures—in some cases well over 100 years. He also had charts showing the new membership record of many individual churches.

Church Cycles Are National

"The first thing that Mr. Martin had discovered, in studying these charts, was that regardless of location, there is a tendency for additions to membership to go up and down together. That is, when people were flocking to join the Congregational churches in Boston, for example, they would also be flocking to join the Congregational churches in Norwalk, San Francisco and Seattle.

"This fact surprised Mr. Martin very much. He had always imagined membership increased or decreased in accordance with local situations. Undoubtedly local influences are important, but Mr. Martin's work showed him that there were national forces at work too, and that the national influences were more important than the local forces.

"Here was something startling. Here are facts that have importance for evangelism in the churches. If the forces that lead people to church membership are national, churchmen must find out what these forces are, and turn this information to use in church building.

Church Cycles are Inter-denominational

"The second thing that Mr. Martin discovered was that additions to membership in the different Protestant denominations went up and down more or less together. At times when great numbers of people were joining Congregational churches, great numbers were also rushing to join the Methodist church, the Episcopal church, the Presbyterian church.

"This also surprised Mr. Martin. He had assumed that increase in Methodist membership would coincide with the coming of the Methodist evangelists; that increase in Presbyterian membership would coincide with the coming of great Presbyterian leaders. And of course in the record one can see the influence of great individuals. But over and beyond this, one can also see general patterns of ebb and flow that seem to affect all denominations simultaneously. These basic forces would therefore seem to operate not only independently of geography but also independently of creed. These forces seem to influence people's desire to turn to God.

Church Cycles Are Rhythmic

"Finally, Mr. Martin made a third discovery, and it was this third observation that brought him to Foundation headquarters. He discovered that at least some of the ups and downs of new membership in the various churches showed rhythm. That is, there was a tendency for the time intervals between peaks to be more or less uniform. Here again was a fact of potential value to churchmen everywhere. No wonder Reverend Martin was excited. If churchmen can learn when to expect a favorable attitude on the part of people in general, they can better take advantage of this situation when it occurs. Also, at these periods of rapid expansion, a better knowledge of what may lie ahead can prevent undesirable over-expansion of plant and facilities.

"Do you have any of Mr. Martin's charts here?" asked Robert.

"Yes indeed." I answered. "I published several of them. Here for example are the charts for the Northern Presbyterians. [See next page.]

The Chart of Presbyterians

"Figure 1 shows the raw data—the actual number of new members who joined through profession and reaffirmation of faith, 1826—1955. Figure 2 shows the same figures smoothed, with arrows added at nine-year intervals and with a trend line. Figure 3 shows the percentages above and below trend with a 9-year zigzag added."

"You say *Northern* Presbyterians. The church did not divide until the Civil War, but your figures go back to 1826. What is the explanation?"

"The figures show the entire church, 1826—1861, Northern church only 1862 to date. I never studied the figures for the Southern church."

"You say additions through 'profession and reaffirmation of faith.' How else could people join?' asked Robert.

"Through certification (letter) and reinstatement. Mr. Martin omitted new members of this sort in the belief that by so doing he could get a better measure of new growth and the impact of evangelism. To simplify things he omitted figures of foreign presbyteries, too."

"How did you smooth the figures in Figure 2?"

"By a three-month moving average. That is, for 1827 I plotted an average of 1826, 1827, and 1828 values; for 1828 I plotted an average of 1827, 1828, and 1829 values and so on."

"Could this manipulation create a 9-year cycle?"

"No. In fact it removes 1/3 of the 9-year cycle, but it removes so much more of the shorter cycles that it helps us to see the 9-year cycle better."

"The 9-year cycle seems to be getting weaker.''observed Robert.

"Yes." I said, "It's hardly discernable since about 1920. The fact that the cycle

THE PRESBYTERIAN CHURCH IN THE U.S.A.(Northern)

New Members Through Profession and Reaffirmation of Faith, 1826-1955

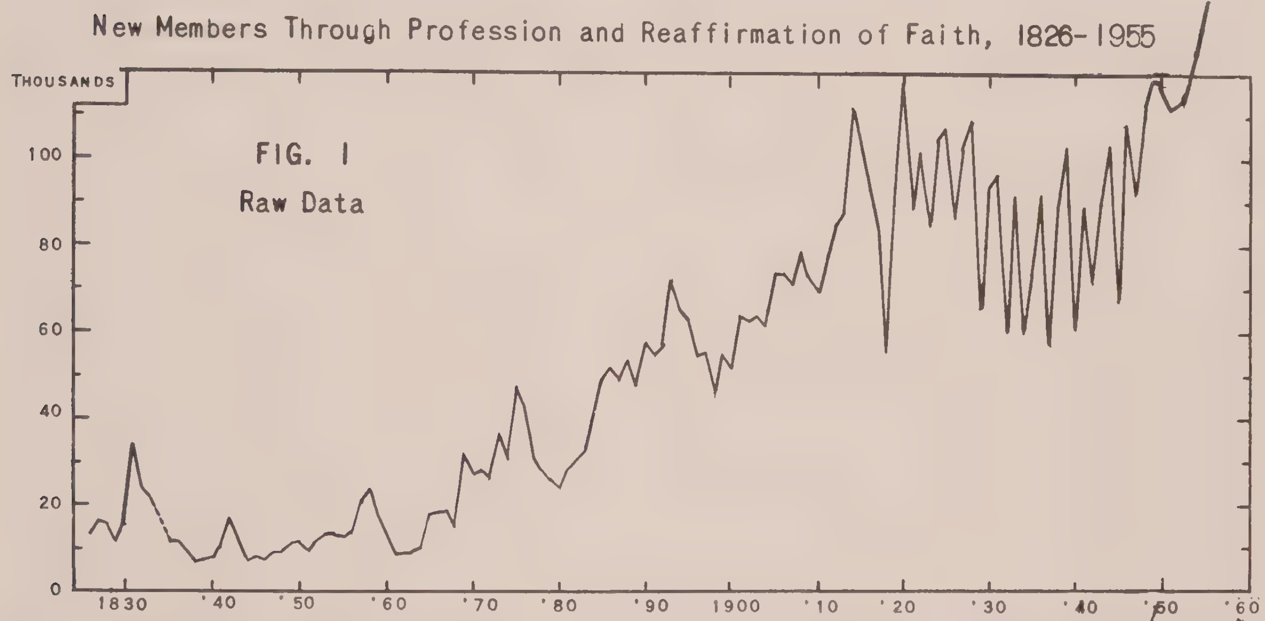


FIG. 1

Raw Data

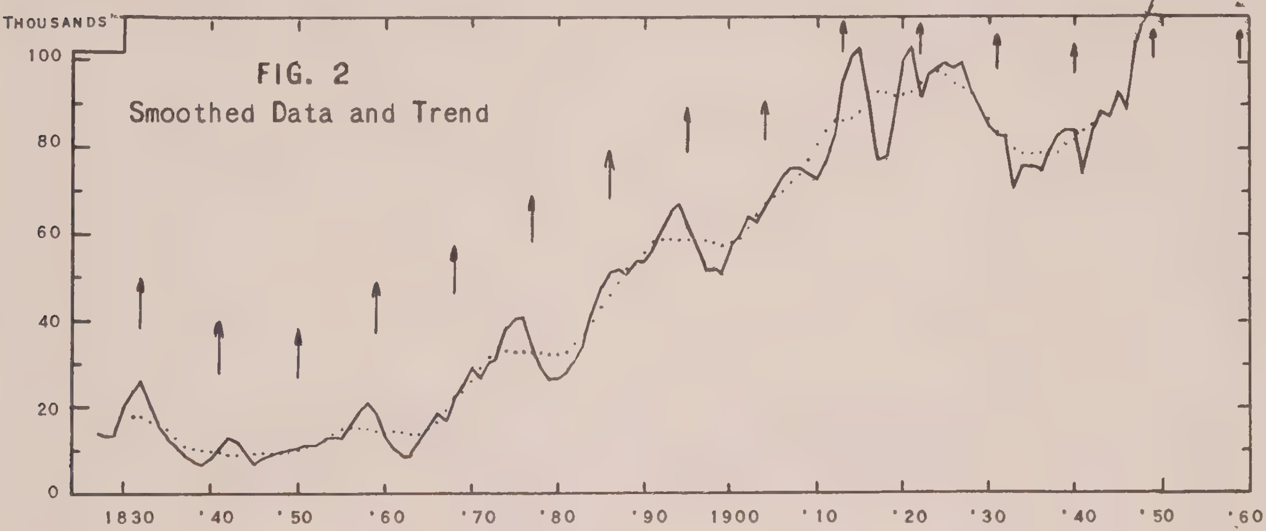


FIG. 2

Smoothed Data and Trend

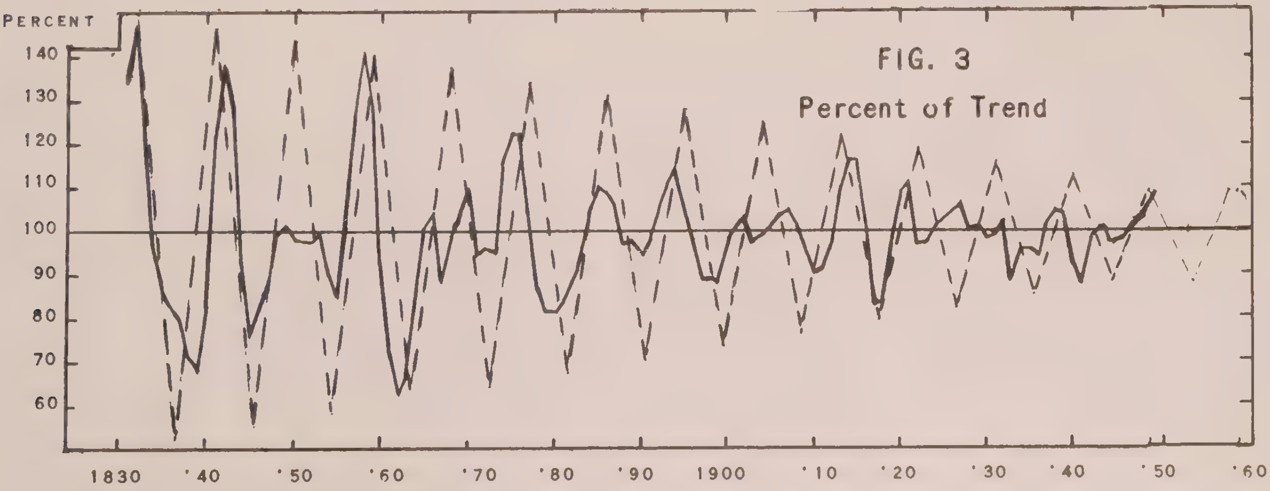


FIG. 3

Percent of Trend

has been fading out is an argument in favor of a suggestion you made at one of our earlier meetings that the 9-year behavior might be the result of two cycles, one a little longer and one a little shorter than the observed length. Or it might be something else."

"I see you have another chart. May I see it?" See page 171.

The Chart of Congregationalists

"Of course." I said. "It shows new members of the Congregational Christian Church 1857 to date in comparison with the new members of the Presbyterian Church. The 9-year cycle in these figures is fading out too."

"Yes," said Robert, "and the last few waves are shorter, aren't they?"

6-Year Cycle Also

"That's the result of a six-year cycle also present in the figures. You can see the 6-year cycle better now that the 9-year cycle has got so weak."

"Can you get rid of the 6-year cycle so we can see the 9-year cycle better?"

"Yes."

"Why don't you do it?"

"Why don't I do a thousand things that need to be done? Not enough time to do them myself—not enough money to hire them done!"

"How about volunteer help?"

"As a rule it's more bother than it's worth."

"I suppose so." said Robert. "But getting back to the Congregationalists, to me, end to end, 1857 to 1955 the cycle looks a little longer than 9 years. Doesn't it to you?"

Length 9.0 Years

"Yes." I said. "And if you look at the Presbyterian chart you'll see that, 1857—to 1955, it looks longer too. But if you follow the Presbyterian chart, which goes back 31 additional years to 1826, you will see that it shortens up again so that overall it's more nearly 9."

"But your series isn't homogeneous." said Robert. "You just told me so yourself. Could the addition of the Southern Presbyterians in the earlier figures change things in any way?"

"By George, you may have something there!" I said. "My scalp and the back of my neck are beginning to prickle as they do when I get a new idea. You are a genius. Have I ever told you about latitudinal passage?"

"Yes, last week in connection with sunspots."

Latitudinal Passage

"Oh yes, so I did. Well, then you know that Dr. Wing has found that certain temperature cycles and certain bird cycles crest later and later as you find them closer and closer to the equator. Now if Presbyterians behave like the temperature and like the Bob-White, the Hairy Woodpecker, and the Downy Woodpecker, the inclusion of the southern figures would pull all those early figures late and make the cycle as we see it appear shorter than it really is. I'll have to get hold of the Southern Presbyterian figures and combine them with the Northern figures won't I? Then I'll have to eliminate the 6-year cycle. Then I'll have to study the figures all over again. You and your ideas! You certainly complicate things!"

"No peace for the wicked." quoted Robert.

"Right." I said.

An Interesting Story

"Don't I remember you said something about venereal disease?" said Robert.

"Yes."

"How do you happen to have venereal disease in there?"

"It's an interesting story." I said. "It was told to me by Dr. Alvin Johnson, now President emeritus of the New School for Social Research.

"It seems that during the early years of this century a system for the control of prostitution had been instituted in Berlin with very satisfactory results in terms of a reduction in the incidence of venereal disease. A similar plan of segregation was under consideration for New York City.

"A Commission was appointed to make recommendations. Dr. Johnson was employed by the Commission to make the investigations and to draft the report.

"The facts were as alleged. A new system had been installed; venereal disease had

THE 9-YEAR CYCLE IN NEW MEMBERS

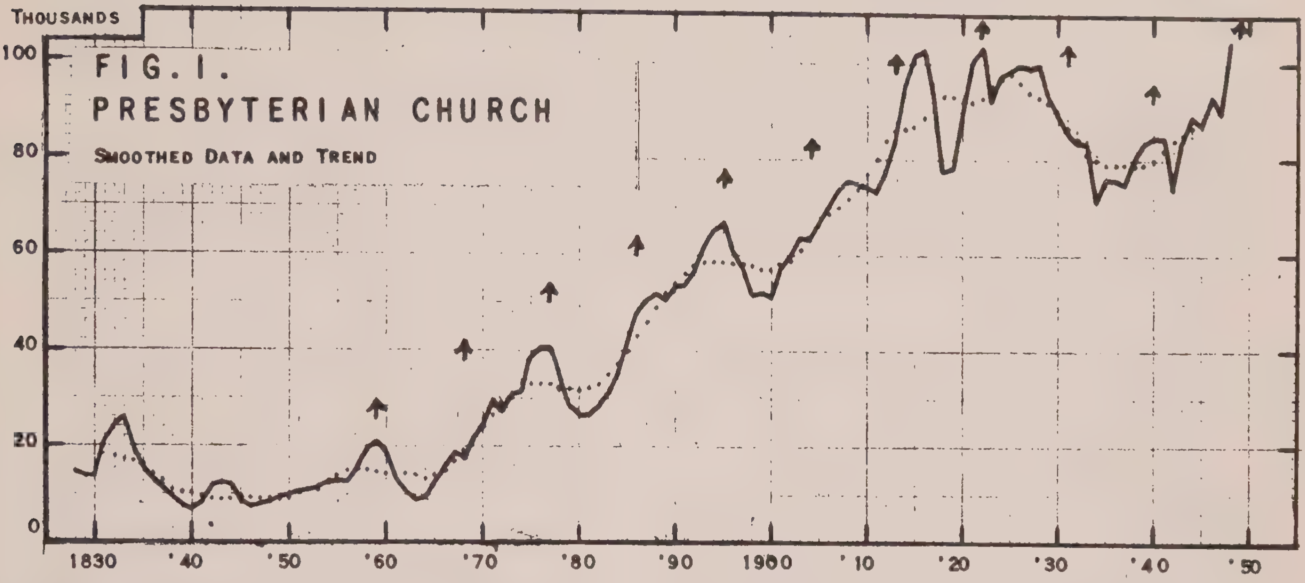


FIG. I.
PRESBYTERIAN CHURCH
SMOOTHED DATA AND TREND

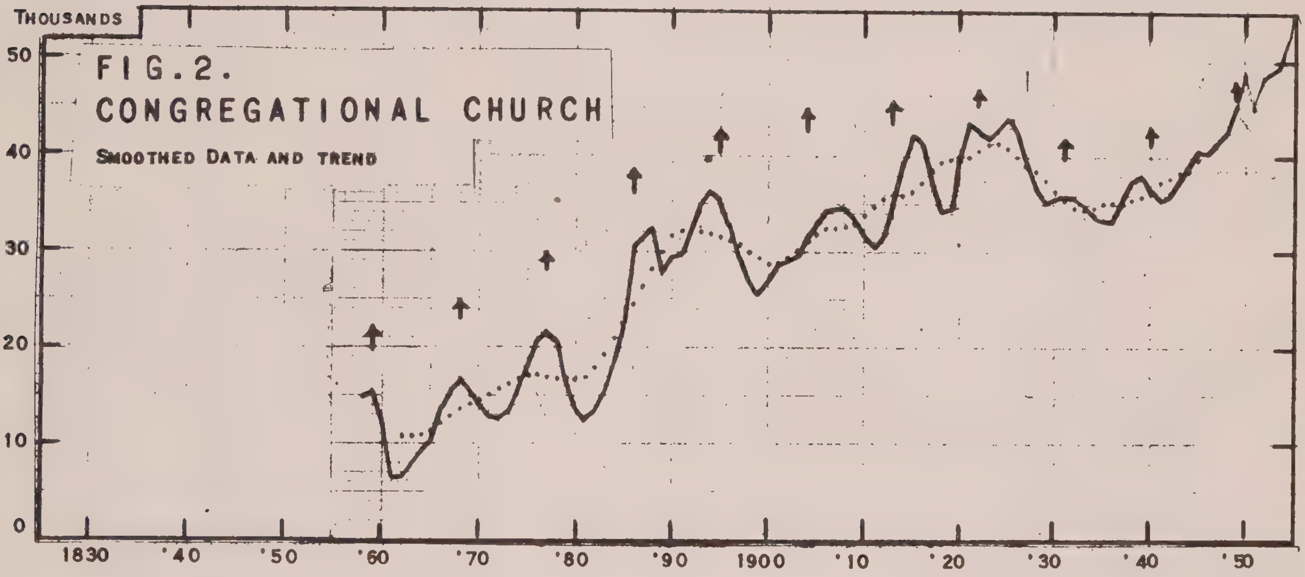


FIG. 2.
CONGREGATIONAL CHURCH
SMOOTHED DATA AND TREND

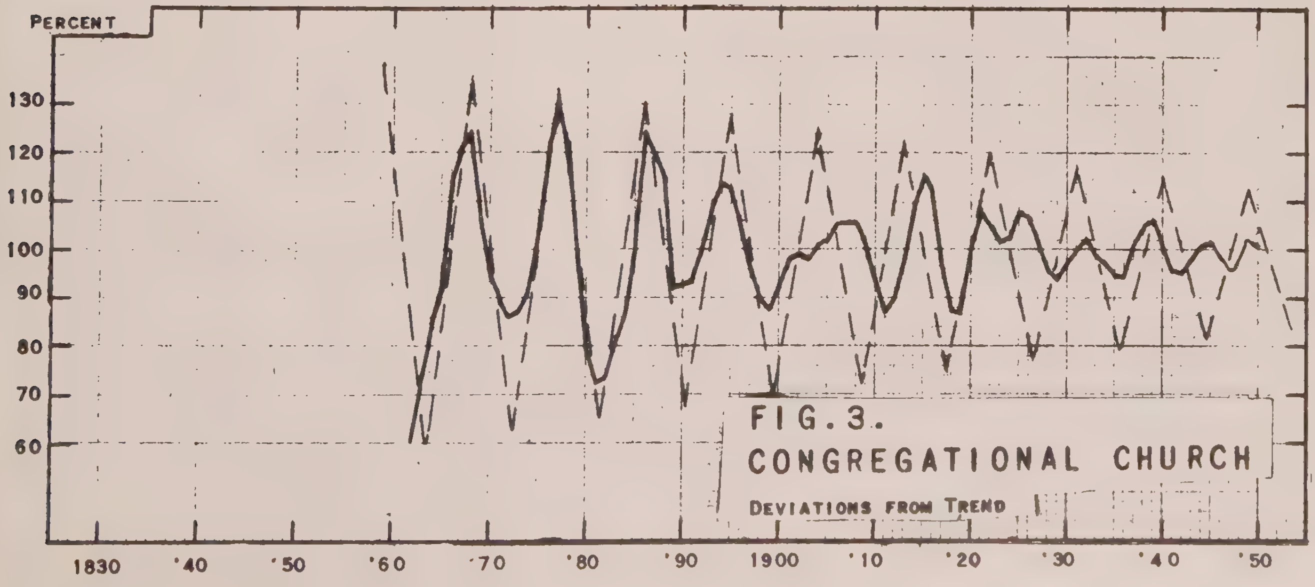


FIG. 3.
CONGREGATIONAL CHURCH
DEVIATIONS FROM TREND

declined, but what Dr. Johnson discovered in addition was that, in Berlin and in other European cities, there was a nine-year cycle in venereal disease and that the Berlin reforms had happened to coincide with the downside of that cycle. In other words, it was not the new system of control that had reduced the venereal disease, it was the cycle.

"Dr. Johnson proved this fact by showing the records of other European cities which had not adopted the Berlin methods. In those other cities the disease rate had fallen as much as it had in Berlin.

"As a consequence, the Berlin methods of segregation of vice were not adopted in New York or in other leading American cities."

"That's quite a story." said Robert.

"Yes," I said, "And it gives us another example of how essential it is to know and and take account of cycles before making any deductions as to cause and effect or before spinning any theories in the fields of history, sociology, and economics. If there are *any* important cyclic forces whatever in these areas of human activity, all theories which fail to take the cycles into account are necessarily in error."

"Don't you have a table or something that gives the lengths and timing of all these 9-year cycles. I'm beginning to get a bit mixed up."

"Yes." I said. "Here is one. [See below.]

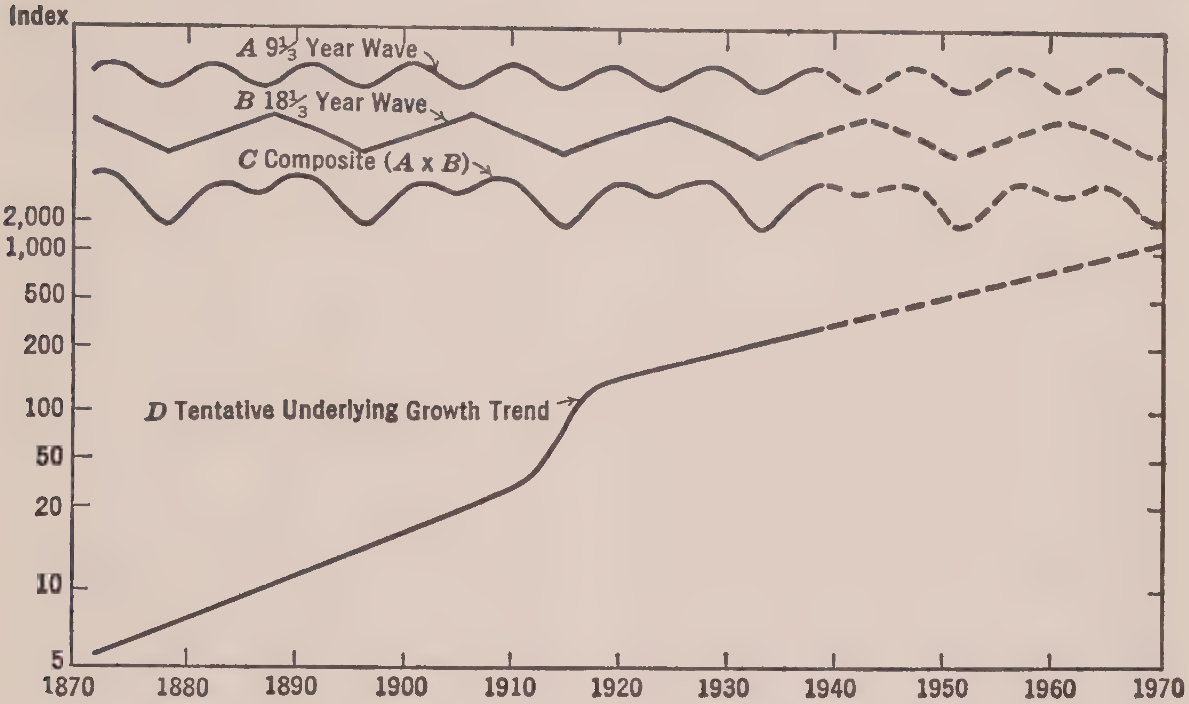
"Let's see," said Robert. "You have told me about lynx abundance, church members, combined stock prices, sunspots, failures, pig iron prices, copper prices, and venereal disease. That leaves cattle on farms, Arizona tree rings, industrial stock

SUMMARY "9-YEAR" CYCLE

Ref.	Phenomena	Span of Years	Cycle Length (Preliminary Estimate)	Time of Current Crest	Strength (% above trend at Crest)
1	Lynx Abundance (Secondary Cycle), 1735—1950	216	9.0	1948	26.5
2	New Members, Presbyterian Church, U.S.A., 1826—1951	126	9.0	1949	u
2	New Members, Methodist Church, 1849—1950	102	9.0	1949	u
2	New Members, Episcopal Church, 1849—1950	102	9.0	1949	u
3	New Members, Congregational Church, 1857—1950	94	9.0	1949	u
4	Venereal Disease,	u	9	u	u
5	Cattle on Farms, 1867—1954	88	9.0	1953	2.4
6	Arizona Tree Rings, Flagstaff, FLH	u	9.1	u	u
7	Combined Stock Prices, 1854—1954	101	9.15	1955.9	17.2
8	Sunspots, 1749—1950	202	9.15	1956.0	11.0
6	Arizona Tree Rings, Santa Catalina	u	9.2	u	u
9	Liabilities of Commercial and Industrial Failures (Inverted), 1857—1953	97	9.2	1954.9	38.0
10	Industrial Stock Prices, 1871—1950	80	9.2	1955.4	23.3
11	Pig Iron Prices, 1784—1950	167	9.2	1955.85	12.2
12	Grasshopper Abundance, 1841—1940	100	9.2	1957.9	139.0
13	Copper Prices, 1784—1950	167	9.28	1956.0	14.3
14	Railroad Stock Prices, 1831—1950	120	9.3	u	u
15	Wheat Prices, 1866-7—1951-2	86	9.3	1955.5	11.5
16	Manufacturing Production, 1863—1953	91	9.3	1955.65	5.9
17	Sales of a Manufacturing Company, 1871—1940	70	9 1/3	1956.9	17.0

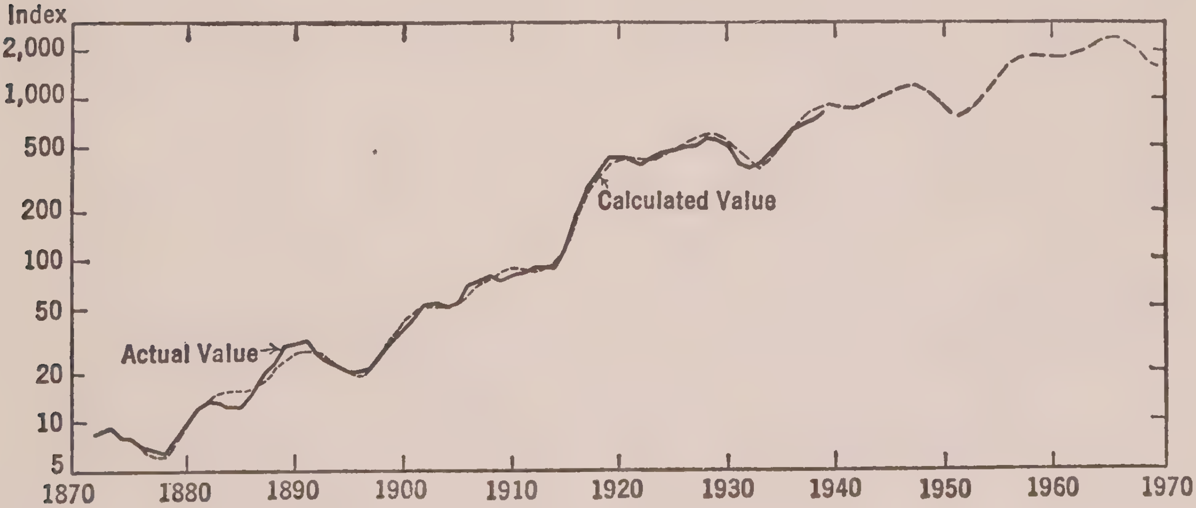
u represents unknown.

For references see page 174.



ANALYSIS

(A) A regular 9 1/3-Year Cycle; (B) a regular 18 1/3-Year Cycle; (C) the Two Combined; (D) the underlying Growth Trend of the Industrial Company, the actual sales of which are charted below. Ratio Scale.



SYNTHESIS

Sales of an industrial company, 1871—1940 (3-year moving averages), together with a synthesis of the regular 9 1/3-year cycle, the 18 1/3-year cycle, and the underlying growth trend, as shown above. This projection gives an idea of what will happen if the rhythms and the trend continue as in the past. Ratio Scale.

prices, railroad stock prices, wheat prices, and the sales of a manufacturing company."

"The rest of them can be disposed of pretty quickly." I said

A Manufacturing Company

"What manufacturing company is it?"

"I'm sorry I can't tell you, except to say it is a very large one the name of which you know. I did a research job for them about 1941. They said I could publish the results but they asked me never to reveal their name. As you can see from the chart Page 173 the company was an old one with figures which started in 1871. It evidenced 9 1/3- and 18 1/3-year cycles. A projection of the 9 1/3-year cycle was due to crest in 1956.9. Over the period of time studied this 9 1/3-year cycle showed an average strength of 17% above trend at time of crest."

"You say you did this work in 1941, How has the 9-year cycle—or 9 1/3-year I suppose I should say—come out in the 15 years since?"

"I don't know. I've never seen any figures for this company later than 1940."

Tree Rings

"How about tree rings?"

"I can't tell you much about them. My files show that A. E. Douglass discovered a 9.1-year cycle in tree rings at Flagstaff, Arizona, and a 9.2-year cycle in tree rings at Santa Cataline, Arizona. However I don't know the dates of crests and troughs, the strength, the number of repetitions or the methods he used. That's the trouble with a good many of these fellows. They don't publish enough to give anyone else a chance to evaluate their work. To my mind scientific writing should be so full and clear and complete that any competent worker could duplicate the work and obtain the same result."

"I'd like to read up on all these 9-year cycles. Where can I find the references?"

"Here's a list of them." I said. [See below] It ties into the summary table I just showed you. The reference numbers in the first column of that table refer to the reference numbers below."

"Well now," said Robert, "that cleans us up except for the "9-year" cycle in cattle on farms, industrial stock prices, railroad stock prices, and wheat prices, doesn't it?"

"Yes." I said, "as far as published material is concerned. But what do you say we pass those subjects up until next time?"

"All right." said Robert. "Let's do that." *E.R.D.*

SUMMARY "9-YEAR" CYCLE

References

1. *Journal of Cycle Research,* Vol. 2, No. 2. Spring 1953. pp. 28-51.
2. *Cycles*, June 1950, pp. 3-8
   Sept. 1952, p. 244.
   May 1953, p. 150.
3. *Cycles*, May 1951, pp. 163-5.
4. *Cycles*, Jan. 1952, p. 17.
5. *Cycles*, Aug.--Sept., 1955, pp. 213-6.
6. *Cycles*, Nov. 1954, p. 316.
   Douglass, A. E., 1928, pp. 69-76.
7. *Cycles*, June--July, 1954, pp. 215-26
   March, 1955, pp. 92-93.
8. *Journal of Cycle Research*, Vol. 3. No. 1. Winter 1954, pp. 3-22.
9. *Cycles*, Oct. 1953, pp. 260-1.
10. *Cycles*, June 1951, pp. 204-7.
11. *Journal of Cycle Research*, Vol 2. No. 4, Fall 1953, pp. 79-89.
12. *Cycles*, June--July 1953, pp. 176-7.
    Nov. 1954, pp. 316-7.
13. *Journal of Cycle Research,* Vol. 3.No. 4, Fall 1954, pp. 99-107.
14. *Cycles*, April 1952, pp. 123-129.
15. *Cycles*, May 1953, pp. 139-141.
    Sept. 1953, pp. 224-7.
16. *Cycles*, Dec. 1953, p. 334
17. *Cycles--The Science of Prediction,* pp. 182-3.

Letters

The Rise and Fall of Nations

Dear Mr. Dewey:

I was especially interested in your Bulletin for April because I happen to have a copy of Sir Flinders Petrie's little book, "The Revolutions of Civilization". I agree with you that he was a pioneer and did a real service in setting forth his observations so clearly and so briefly.

It appears that you may not be familiar with the similar work of another man who lived a century earlier. I refer to William Playfair, who published, in London in 1805, a book entitled "An Inquiry into the Permanent Causes of the Decline and Fall of Powerful and Wealthy Nations". Since I happen also to have a copy of this original book, I am sending you a photostatic copy of the title page and the principal chart [the chart referred to is being reprinted on the next two pages], which shows graphically his observations concerning the rise and fall of nations.

With best wishes.

Sincerely yours,
Edward F. Moore

New York, New York

The Maya, Toltec, Mixtec-Zapoltec, and Inca Cultures

Dear Mr. Dewey:

Your reprint of 'The Revolutions of Civilisation' has aroused my interest, but I question that a study of the Maya and other pre-conquest peoples of the Americas would indicate a period as long as 1500 years for the cultural cycles. At the time Mr. Petrie's book was written (1911), little was known about the chronology of these peoples beyond some rather vague legend. Most of the excavation of their cities and the decipherment of their dates has occurred since then. It is now known that the Mayas did not emerge from the basket and pottery level until around the 1st century A.D., and that there were two definite periods, the second of which had sharply declined by the time of the conquest. The Toltecs displayed wonderful skill as builders, but the earliest of their structures is not believed to date before the 5th or 6th century A.D., and they had declined and split up into minor groups at the time the Aztecs arrived early in the 14th century. There is considerable Toltec influence in the second, or "New" empire of the Mayas, but it appears to be that of individuals. There is no evidence of any conquest of the Mayas by the Toltecs nor of any appreciable migration of the Toltecs to Yucatan. The Mixtec-Zapotec group who built the structures found at Mitla and Monte Alban near Oaxaca, appear to be even later than the Toltecs and to have declined by the time of the conquest. In South America, the Incas date from about the 11th or 12th century, and like the Aztecs in Mexico, were on the up-grade when the Spaniards conquered them.

Reviewing what is known about these various groups, it would seem that a cycle length of around 750 years would fit much better than one of 1500 years. The matter has been discussed at length by many authorities, who viewed the rise and decline of the groups as separate phenomena rather than repetitions - the "New" empire of the Mayas occurred in a new locality - and most of them attribute the declines to the agricultural methods used, the planting stick rather than the plow, and the resulting depletion of the soil. One wonders whether the 1500 year cycle around the Mediterranean could be tied in with a cycle of agricultural productivity.

Very truly yours,
James A. Block

Los Angeles 35, California

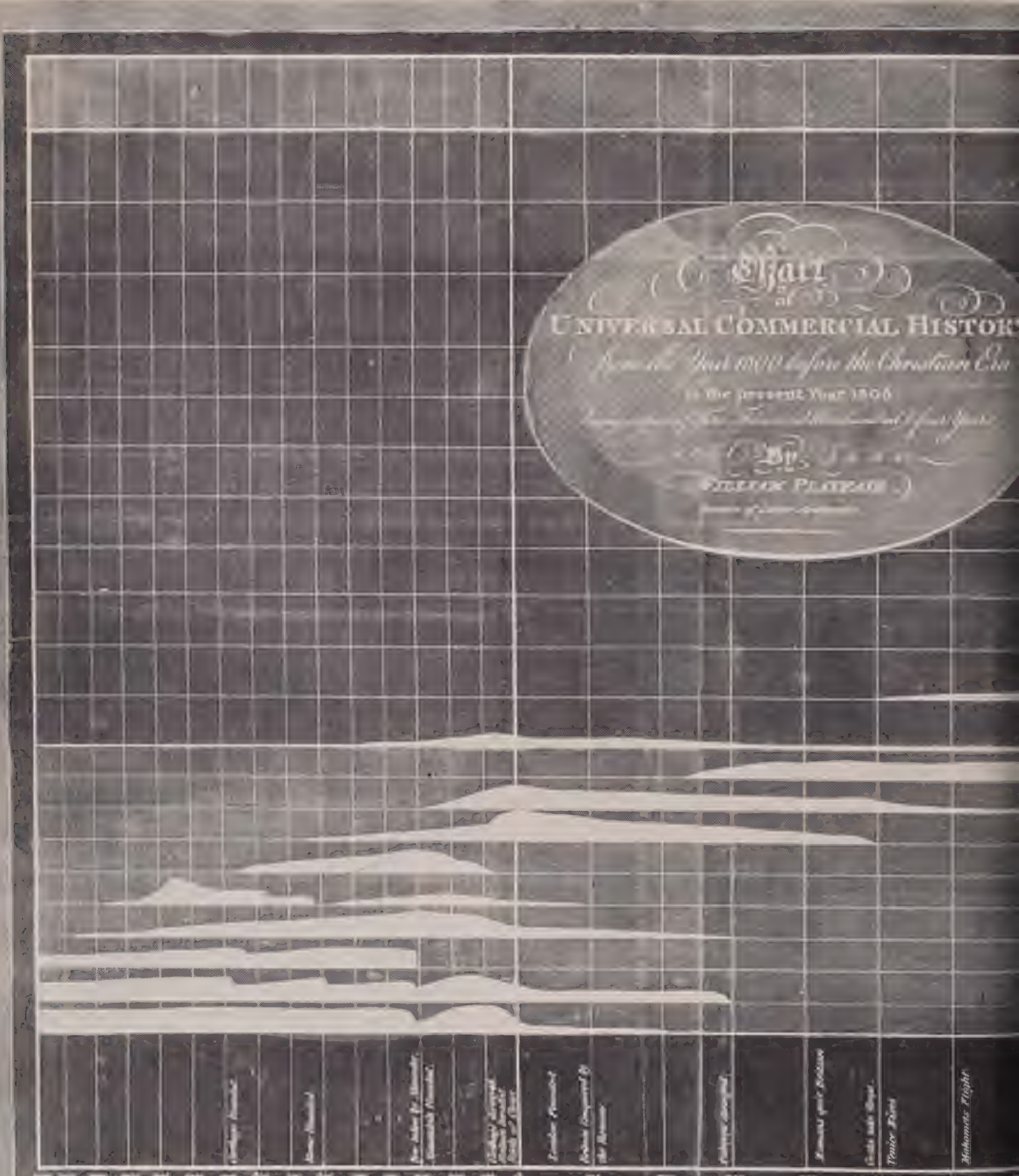
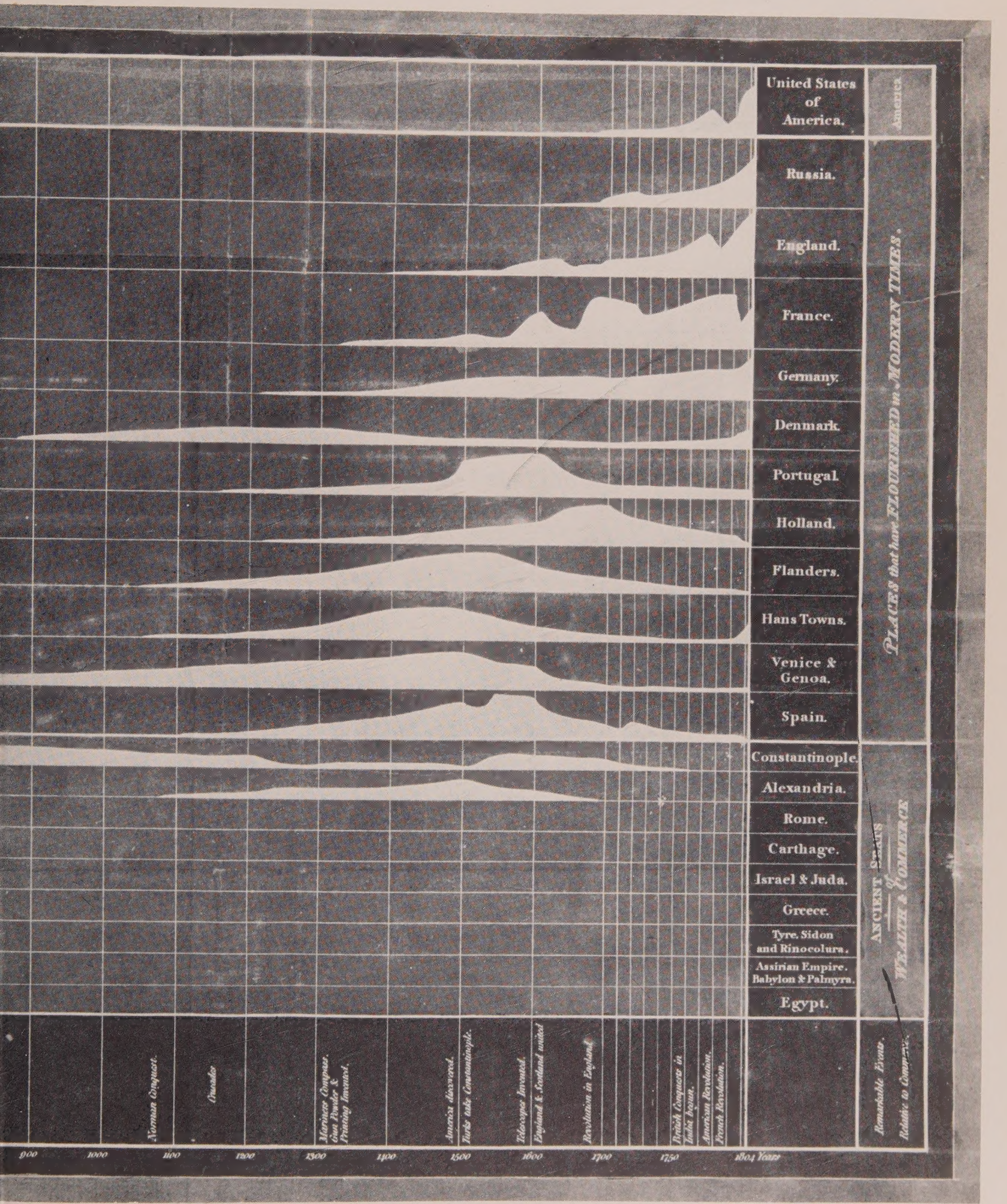


Chart
of
UNIVERSAL COMMERCIAL HISTOR
from the Year before the Christian Era
to the present Year 1806
By
WILLIAM PLAYFAIR
London Founded
Venice Built
Mahomets Flight
Before Christ


United States of America.
America.
Russia.
England.
France.
Germany.
Denmark.
Portugal.
Holland.
Flanders.
Hans Towns.
Venice & Genoa.
Spain.
PLACES that have FLOURISHED in MODERN TIMES.
Constantinople.
Alexandria.
Rome.
Carthage.
Israel & Juda.
Greece.
Tyre, Sidon and Rinocolura.
Assirian Empire, Babylon & Palmyra.
Egypt.
ANCIENT SEATS of WEALTH & COMMERCE
Norman Conquest.
Crusades
Mariners Compass. Gun Powder & Printing Invented.
America discovered.
Turks take Constantinople.
Telescopes Invented.
England & Scotland united
Revolution in England.
British Conquests in India begun.
American Revolution.
French Revolution.
Remarkable Events Relative to Commerce.
900
1000
1100
1200
1300
1400
1500
1600
1700
1750
1804 Years

THE MODIFIED GEISINGER INDICATOR

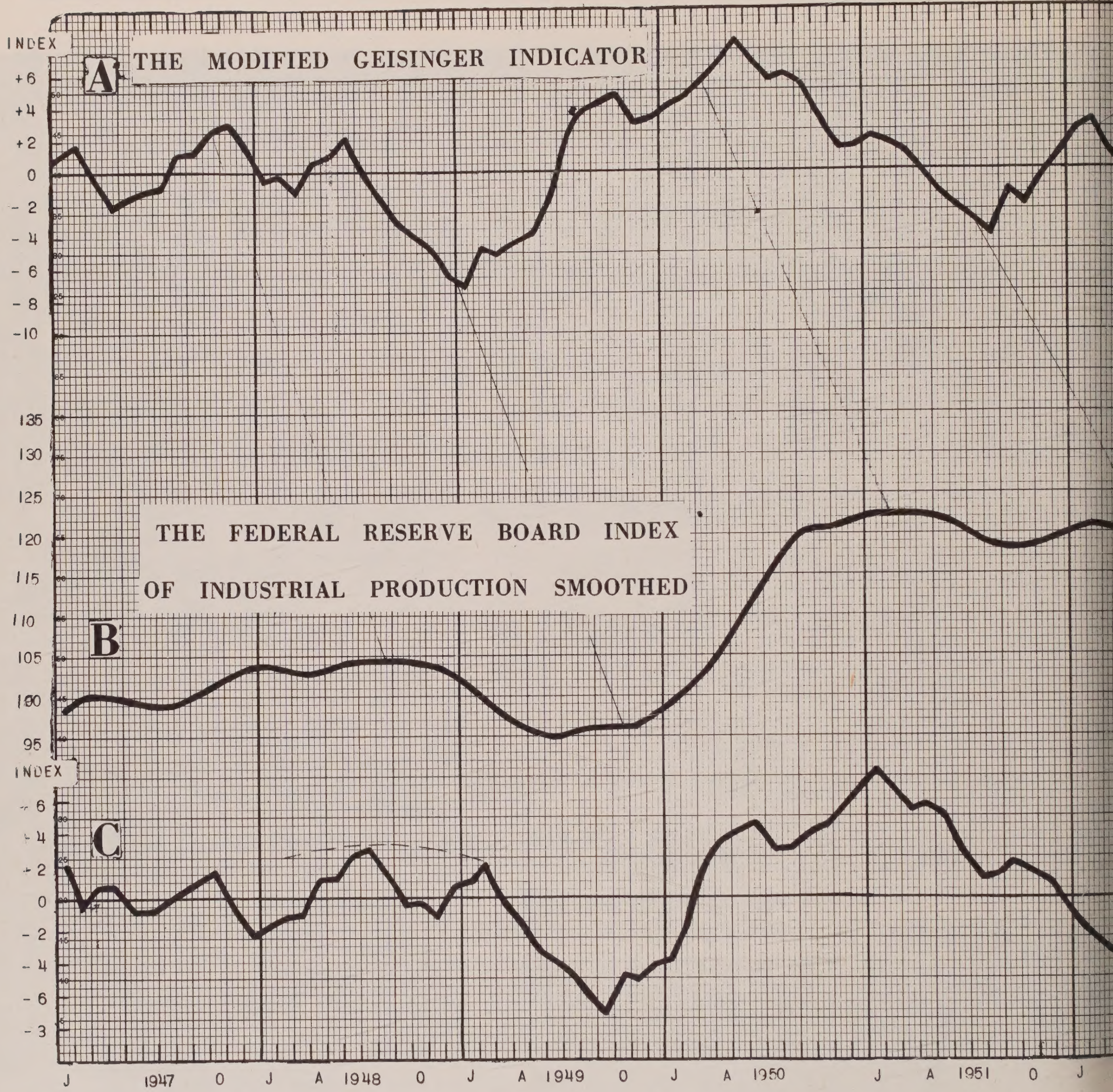
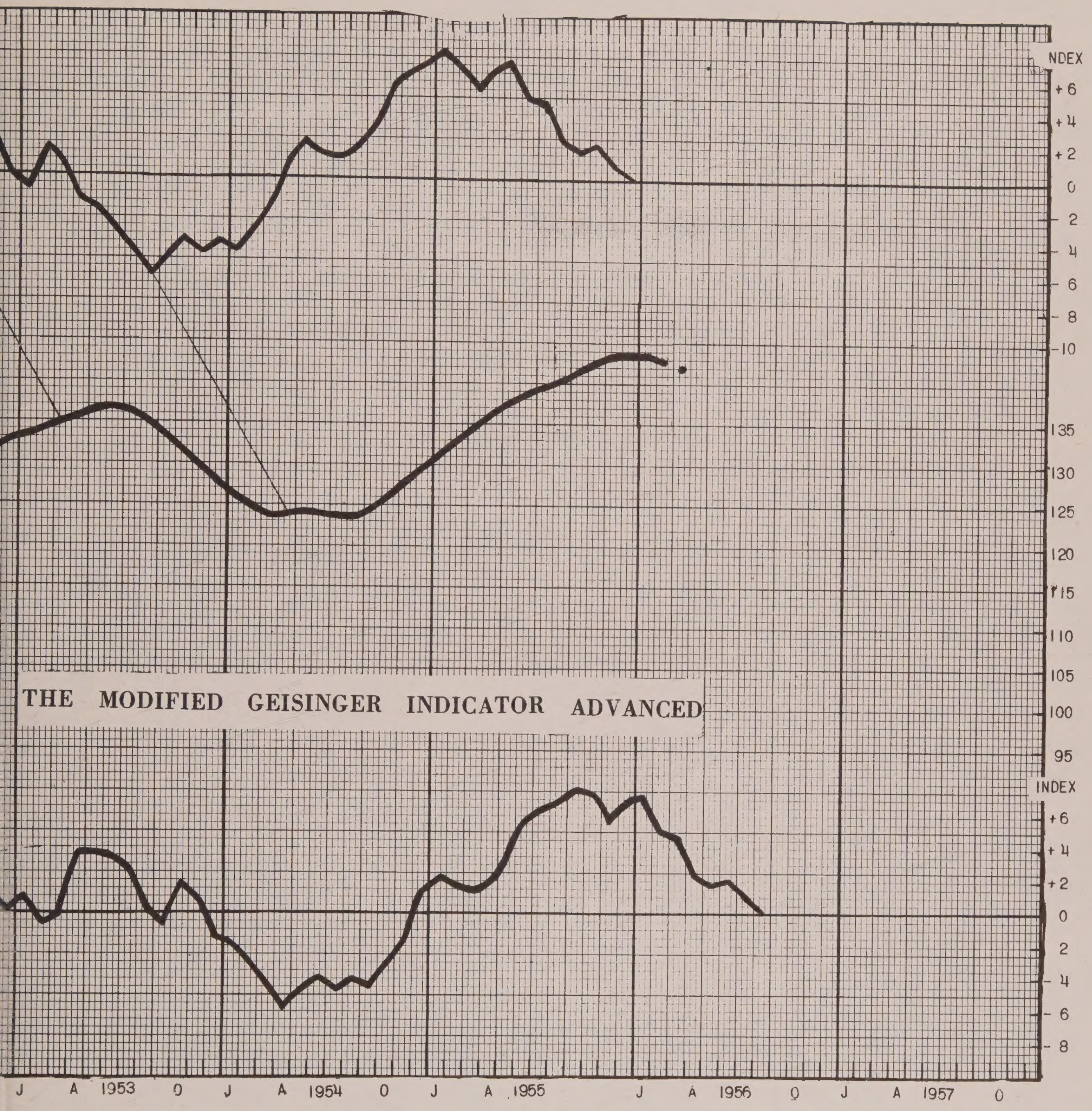


Fig. 1 Curve A. The Modified Geisinger Industrial Production Indicator Curve. This curve is derived from certain figures which are published monthly in the *Survey of Current Business*. It tends to turn about 8 months before the Federal Reserve Board Index of Industrial Production.

Curve B. The Federal Reserve Board Index of Industrial Production adjusted for seasonal variation and smoothed by a 3-month moving average. The value for the latest available month is shown by a dot.

Curve C. This curve is the Modified Geisinger Industrial Production Indicator Curve advanced by 8 months. This process projects part of the curve into the future. If the relationships of the past continue, the projection gives some hint of what may happen to the Federal Reserve Board Index of Industrial Production (Curve B).

OF INDUSTRIAL PRODUCTION



THE FORECAST

The value of the Modified Geisinger Indicator of Industrial Production dropped again. It declined from +.8 for November 1955 (July 1956 when projected) to +.1 for December 1955 (August 1956 when projected).

The Federal Reserve Board Index of Industrial Production is down from 143 for February 1956 to a preliminary value of 142 for March 1956. It is interesting to see this index start to roll over in accordance with expectations.

It certainly is neat the way this thing works, isn't it?

Caution continues to be the watchword for 1956.

E.R.D.

Mr. H. A. Musham
741 No. Rush St.
Chicago, Ill.